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ABSTRACT

A study was conducted to determine what subject areas should be taught in a prevocational agriculture program, as perceived by instructors with existing prevocational programs. Following a review of literature that found only a few sources on prevocational agriculture programs, most of them guides for middle school curricula, a survey instrument was developed and mailed to 60 Iowa teachers of prevocational agriculture classes; 55 teachers returned the surveys. Analysis of the data revealed that the teachers averaged 10 years of teaching experience, had been teaching prevocational agriculture classes for about four years, and had about 46 students in each class. The most popular length of the prevocational agriculture classes was nine weeks, and the most popular year for the course was eighth grade. The teachers listed a variety of topics as useful to teach in the agriculture course, especially horticulture, animal science, Future Farmers of America activities, agribusiness, careers, agronomy, agricultural mechanics, agriculture awareness, construction, and farm management. The study found that offering a prevocational agriculture class did not increase enrollment in regular vocational agriculture programs. Based on the findings of the study, recommendations are made for a prevocational agriculture curriculum. The study instrument and a list of programs surveyed are appended. (KC)

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A STUDY OF EXISTING PRE-VOCATIONAL AGRICULTURE PROGRAMS IN IOWA

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CHAPTER I

INTRODUCTION

In 1979-80 the K-12 Enrollment Statistics Report of the Iowa Department of Education reported 550,023 students enrolled in Iowa public schools and by the 1986-87 school year the number had declined to 481,205. In the fall semester in 1980 Iowa State University reported 3,280 students enrolled in the college of agriculture. In the fall of 1987, the number was only 1,966. These statistics show a decline in enrollment not only in the agricultural sector of education, but also a decline in the public school enrollment.

Agriculture has gone through a recession in the United States. Parents are advising their children not to go into an agricultural field, because they feel there is no future in agriculture. In the Wednesday, October 7, 1987 edition of The Des Moines Register, the title of an article by Victoria Benning read, "Agriculture's latest woe: Shortage of college graduates seeking Jobs." Dale Stansbury, director of agriculture and natural resources for the National Association of State Universities and Land Grant Colleges, was quoted,

> "Part of it is marketing. It's making students aware that agriculture goes beyond production-it's the food chain, natural resources, world trade. It's not just a hot day in a hay field."

The industry of agriculture needs new graduates to go into various jobs. Industry is looking for students graduating in

agriculture. As Stansbury said, "farming isn't just farming anymore, or a hot day in the hay field." Agriculture instructors need to open up the eyes of students as well as parents. They should establish a need for young people to go into the agriculture fields. To establish this need, the instructor must share the facts about agriculture with students as soon as possible in the school. He/she is constantly competing with other subject matter areas for students. To work with the the younger student, pre-vocational classes should be developed.

There are a relatively few agriculture instructors who have pre-vocational (exploratory) classes. A large amount of variation exists in the offerings of exploratory classes in agriculture. The exploratory program may be offered in the sixth, seventh or eighth grades. The time instructors have with these students may vary from four to eighteen weeks. Sometimes the instructor may only have a day or a week to tell the story of the agriculture industry. Of the instructors that have pre-vocational classes, most search for what actually should be taught in a pre-vocational class and for how long.

The schools that have pre-vocational classes may offer the pre-vocational agriculture class on a rotational basis with other subjects such as a foreign language, industrial arts, typing, home economics education, or computer science. Most schools in Iowa have some sort of exploratory class for sixth, seventh, or eighth grades, but the majority do not have pre-vocational agriculture classes. In fact, the majority of schools offering

vocational agriculture classes (known as agricultural science, technology, and marketing in Iowa) do not have pre-vocational agriculture classes.

According to research that was sighted in the Curriculum Guide in Agribusiness and Natural Resource Education, it has been shown that experiences in the elementary and middle schools may be closely related to future occupations of the individual. Vocational exploration at these levels broadens the understanding of the individual of the world of work and may direct his or her interests toward tentative vocational areas and goals. It is understood that the occupational aspirations are only tentative. Adolescents normally are not able to make specific decisions regarding vocational intent at the junior high school level. An opportunity to explore the world of work and discover areas of interest is the primary goal of the agricultural instructional program at the pre-vocational level.

In the exploration phase of career development in junior high, the learner begins to explore his or her real interests, aptitudes, and desires, and the occupational clusters that comprise the world of work. During this phase of his or her development the learner recognizes the educational setting as a place to gain direction and skills needed for the development of career goals. He or she considers their developing maturity as continually influencing his or her perception of educational needs. The learner examines the behaviors and life styles relating to the organization of the world of work. Careers are

explored and he or she learns that skill perception is related to career selection and change.

Educational experiences provided during this phase of career development prepares the individual to assess and pursue the career options open to them. By careful screening and selection, the student may be able to choose those high school courses which relate to his or her personal attributes, satisfactions and career knowledge. As a result of these experiences, the learner begins the process of selecting an occupational area for which to prepare for job entry.

The images of farming and of agriculture need clarification. Too many terms are used synonymously. Students from both the farm and the city should have an opportunity to develop an understanding of the interrelationships between the farm and urban people and businesses. They need to become knowledgeable concerning the principles involved in food production, processing and distribution. They need to consider these principles as applied to the local community, to the state, the nation, and in international situations.

Approximately 22 million people now work in agriculture and ag-related fields. But only 10% are directly involved in traditional farming. The rest work in agribusiness, communication, science, government, education, processing and distribution, marketing and sales as well as dozens of other occupations which serve the farmer or the total agricultural industry. It is important that youth understand the

opportunities in these occupations. It is also important that youth with agricultural backgrounds, whether acquired on the farm or in off-farm agricultural businesses and industries, be encouraged to capitalize on those backgrounds by preparing for and engaging in agricultural occupations.

PURPOSE

The purpose of this research is to determine what subject areas should be taught in a pre-vocational agriculture program as perceived by instructors with existing pre-vocational programs. The independent variables are the instructors themselves and the dependent variables are the opinions that these instructors have about the subject matter to be taught in the pre-vocational classes.

ASSUMPTIONS AND LIMITATIONS

The researcher assumes that the instructors responding will be factual and honest in their answering of the questions. There are limits however, in that the researcher is drawing the sample from Iowa agriculture instructors who already have some type of pre-vocational program. The researcher set a goal for the return of the survey instrument at 90 percent. The information that is received can be applied to a course of study for Iowa Agricultural Science, Technology, and Marketing programs.

THEORY

The basis of the hypotheses for this study is the following concepts and reasoning:

1. Community and school needs will vary from school to school.
2. There is a need to educate the students in school on the opportunities in agriculture.
3. Since there is declining enrollment in school, with a pre-vocational program the instructor may be able to establish his/her enrollment earlier.
4. Philosophy between instructors may vary drastically.
5. Therefore, in the end there should be a select curriculum to follow in the pre-vocational program.

CHAPTER II

REVIEW OF LITERATURE

A preliminary review of the literature found only a few sources on pre-vocational programs. Many of these are curriculum guides for middle school.

Rexrode (1980) defined three points to pay particular attention to when writing curriculum for middle school grades. They are: 1) Develop skills in reading, writing, speaking and listening, 2) Gain in general education, and 3) Develop good character and self respect. He said the teacher has to stay in general education that the 7th or 8th grade student can understand and relate to. Crunkelton (1980) also mentioned that the pre-vocational programs are the first exposure to the prospective students, therefore, the instructor has to gain interest, a need, and respect in a matter of 6-9 weeks with the areas of study. Dilig (1978) presented a guide for junior high teachers to plan their curriculum. The article outlined how to set up a middle school curriculum, however, nothing in agriculture was discussed. Hemp (1980) suggested that the teachers should compare the old curriculum with the core curriculum and weigh the advantages and disadvantages of each. The studies that have been done in several states are favorable to a core curriculum.

Agriculture is more than farming and Ward (1987) discussed in a conference paper the importance of changing the "production"

aspect of agriculture. He suggests more agribusiness and non-production courses. He sights three ways to change: 1) effective leadership/reduced resources, 2) communication involvement, and 3) concerns/utilization. Even though Dr. Ward did not discuss the pre-vocational aspect of agriculture, the general trend seems to be in de-emphasizing production agriculture.

Cooley and Martin (1986) wrote a pre-vocational educational program for agriculture. The curriculum guide has a complete set of objectives, teaching strategies, and student activities for agriculture instructors to incorporate into their curriculum.

A paper written by Dees contains a model for continuing education. They list the grades students should be taught different subjects of importance. K-6 - career awareness, 7-8 - career exploration, 9-10 - career orientation, 11-12 - career preparation, 13-14 - career post secondary preparation, 15-16 - university training, and then continuing education.

The Iowa Department of Education (1975) lists several career education objectives during the exploration phase of their learning time. During this exploration phase the learner continues to compare personal characteristics with the knowledge gained from the exploration of careers. Then the learner begins to identify occupational areas that most closely align with his/her self concept.

The National Center for Approved Technology published a curriculum guide for the 5th and 6th grades called "Connections"

that deals with food and fiber production that could easily be adapted to almost any exploratory type program.

The State of Iowa Department of Education, published "Pre-vocational Agricultural Science and Technology Suggestions" (1-87 and 6-87). The papers listed several general statements to consider when planning a pre-vocational program; ie.."place emphasis on math, science, and communication skills being taught in the high school program." The paper also listed a group of 23 suggested topics of instruction for prevocational programs and a short description of each topic and how it can be used.

The 1973 Curriculum Guide in Agribusiness and Natural Resource Education developed by Iowa State University and the Iowa Department of Public Instruction has a section which makes recommendations regarding a pre-vocational curriculum. The guide recognizes the following competencies that a student should have received after taking pre-vocational agriculture.

1. Recognize the contribution of farming and urban agriculture to the welfare of the nation and of the individual.
2. Distinguish the interdependence of the agricultural and nonagricultural segments of American industry.
3. Explain the factors involved in food production, processing, and distribution.
4. Recognize and explain the place of agriculture in the world of work.
5. Identify and describe the specific employment opportunities in agriculture available in the local community, in the state and in the nation.
6. Determine and explain the experience and educational preparation necessary for employment in various occupations.
7. Distinguish the place of agriculture at the high school and area vocational-technical school levels, and of the

colleges of agriculture in the preparation of individuals for employment.

8. Describe the contribution of the FFA activities (Future Farmers of America Organization) to the educational development of members (leadership, citizenship, cooperation).
9. Demonstrate abilities in leadership and in agriculture which may be spring boards of interest for continuing education in agriculture.
10. Describe the need for conservation of natural resources related to agriculture and recreation.

The guide pointed out that exploratory agriculture may be provided in specialized courses at the 7th or 8th grade levels, or included in a careers exploration course involving other areas of occupational education. Figure 1 shows the example curriculum for exploratory agriculture that the curriculum guide presented.

Figure 1. Example Curriculum Guide for Exploratory Agriculture Programs

9-Week Course Unit	Days
Economic Contribution of Agriculture	5
Employment Opportunities in Agriculture	5
Educational Opportunities in Agriculture	5
Leadership Development	5
Animal Science	5
Plant and Soil Science	5
Agricultural Mechanics	5
Conservation of Agricultural Resources	5
Farm and Home Beautification	5
	45 days

12-Week Course Unit	Days
Economic Contribution of Agriculture	5
Employment Opportunities in Agriculture	5
Educational Opportunities in Agriculture	5
Leadership Development	5
Animal Science	5
Plant and Soil Science	5
Agricultural Mechanics	5
Conservation of Agricultural Resources	5
Farm and Home Beautification	5
Farm-City Relationships	5
Personal Finance	5
Home Safety	5
	60 days

18-Week Course Unit	Days
Economic Contribution of Agriculture	10
Employment Opportunities in Agriculture	5
Educational Opportunities in Agriculture	5
Leadership Development	10
Large Animal Science	5
Small Animal Science	5
Crop and Soil Science	5
Plant and Soil Science	5
Agricultural Mechanics	5
Conservation of Agricultural Resources	10
Horticulture	5
Farm and Home Beautification	5
Farm-City Relationships	5
Personal Finance	5
Home Safety	5
	90 days

CHAPTER III

METHODOLOGY

Wayne Nattress, Consultant in Career Education at the Department of Education, was contacted to see if the information on instructors teaching a pre-vocational class in Iowa could be pulled off of the CE 5 forms for vocational education. The researcher then compiled a list of the agriculture instructors in Iowa who have pre-vocational programs.

The method used to determine what subject areas are being taught in pre-vocational programs was a survey instrument designed to evaluate what subject areas should be taught in a pre-vocational class and how many days should be required for each. The survey was distributed to all Iowa instructors having a pre-existing agriculture pre-vocational coarse offered that they teach. A follow-up survey for nonrespondents was sent after two weeks. At the end of the following two weeks, telephone contacts were made to the remaining nonrespondents.

The survey information was compiled and analyzed by determining the mean and standard deviation of each entry.

TRY-OUTS

This survey was administered to four high school instructors of agriculture and two agribusiness professionals. Following the sampling of the individuals several of the questions were reworded to clarify ambiguous terms and questions that were hard

to understand. A cover letter was drafted and three agriculture instructors reviewed the letter. Changes were made in an effort to increase the face validity of the survey.

INSTRUMENTATION

The same instruments were given to each instructor. First a questionnaire (survey) was sent to each instructor that included: name, school, years of teaching experience, years taught pre-vocational class, students enrolled in agriculture, students enrolled in entire school, number of years pre-vocational class has been offered, students enrolled in agriculture, students enrolled in entire school, how many weeks the pre-vocational class is taught (6 weeks, 8 weeks, etc.), what grade level(s) are offered the pre-vocational class, how often the students meet in a week (daily, alternate, etc.), are there other exploratory type classes taught in the sequence, and is there travel time between schools. The section that followed was a 1-5 rating of several subject areas for the instructors to rate in the area of importance to teach in a pre-vocational class. There was also a column to designate time allotment in days to each of the statements. After the instrument was in rough draft form, it was presented to three professors at Iowa State University (author's program of study committee) to review as well as other agriculture instructors. The survey form was then revised following the reviewers' comments.

COLLECTION OF DATA

The survey forms and letters to the sample group of instructors were computer printed and mail-merged with addresses. The surveys were mailed to 60 high school agriculture instructors having a pre-vocational course already in existence within the total agriculture program curriculum. (See Appendix A for letters and survey instrument)

A second survey form was sent to all nonrespondents. Follow-up telephone calls to further nonrespondents were made on April 19, 1988. A cut off date of April 25, 1988 was established to terminate collection of data and begin analysis. Complete return results are presented in Table 1.

Table 1. Summary of Response Rate

	Number in original Sample	Number Responding	Percent of original Responding
Agriculture Instructors teaching a pre-vocational class	60	55*	91.7%

* The other 5 instructors received two surveys and a telephone call, but surveys were not receive before the cut-off deadline.

ANALYSIS OF DATA

Once the data was gathered, it was coded by hand with a calculator and put into tables, numbers, and percents. Frequencies tabulated by category, including cross-tabulation to show relationships between variables, including percentages, means, and standard deviations.

Copies were made of the data to compare results of the survey questions. Questions frcm the survey were grouped and compared to one another. The overall results from the surveys are presented in tables in Chapter IV.

CHAPTER IV

FINDINGS

The sample of agriculture instructors were asked several background questions to get a feel for the type of agriculture program they have. The state average for years of teaching experience was approximately ten, as compared to the sample, which is 9.55 years of teaching experience. The researcher can conclude from the data of 3.64 years of teaching a pre-vocational class, that the pre-vocational agriculture class is relatively a new experience for most Iowa high school agriculture instructors. In examining how many students are enrolled in a pre-vocational agriculture class, one can see that 45.67 is a relatively high figure when compared with the total agriculture program enrollment. The high number accounts for the entire seventh or eighth grade class taking pre-vocational agriculture on a required basis maybe for only six to eight weeks. The mean for total enrollment in agriculture is 42.47 as found by the researchers data, as compared to the state average in 1987 of an average of 39 students taking high school agriculture. One can see by the data that the researcher is looking at very typical agriculture programs in the state which offer a pre-vocational agriculture class. Total high school enrollment of schools with high school agriculture and a pre-vocational agriculture class of some sort is 224.82, as opposed to the state average total enrollment of high schools in 1987 which was 344 students.

The standard deviation of "how many enrolled in a pre-vocational class" is distorted because of one school having 110 students in the 8th grade class taking exploratory type agriculture.

The respondents were asked what type of agriculture program they had in their school. The results show 65% of the 55 schools surveyed have traditional type agriculture programs. The traditional style of program may include Vocational Agriculture I, Vocational Agriculture II, Vocational Agriculture III and Vocational Agriculture IV. A modified- traditional program includes some semester type classes as well as the traditional Vocational Agriculture I, II, III and IV. The sample shows 24% having this type of program. The semester class type of program is advised for Iowa vocational programs in agriculture. A semester type program can provide for more subject areas to be covered during the coarse of a year as well as identifies the class subject matter; ie. Vocational Agriculture I - does not give any indication of what subject matter is taught in that class, however, a semester class of Animal Science I at least gives the learner an opportunity to know what subject matter topic is being taught. Even with the advisement of the semester class, only 11% were shown having a semester type program in the survey.

Table 2. Background Information

	Mean	Standard Deviation
Years of Teaching Experience	9.55	8.86
Years of Teaching A Pre-Vocational Class	3.64	3.26
How Many enrolled in Pre-Vocational	45.67	34.20
Total Enrollment in Agriculture	42.47	16.06
Total High School Enrollment	224.82	148.53

Table 3. Traditional, Modified-Traditional and Semester Agriculture programs

	Actual	% of Total
Traditional	25	65%
Modified-Traditional	10	24%
Semester	5	11%

The survey asked the respondents the actual number of weeks they taught the pre-vocational agriculture class (Table 4). The most popular weekly offering was 9 weeks. 56 percent of the total surveyed offer the pre-vocational agriculture class on a 9 weeks basis. The only other popular time offering was 6 weeks, however, only 11 percent have the class offered on this time frame.

Table 4. Actual Number of weeks Pre-Vocational Agriculture is Offered.

Number of Weeks Being Taught	Actual Number of Sample	% of Total Sample
3 Weeks	2	4
4 Weeks	2	4
4.5 Weeks	1	2
5 Weeks	1	2
6 Weeks	6	11
7 Weeks	4	7
8 Weeks	3	5
9 Weeks	31	56
12 Weeks	2	4
18 Weeks	2	4
36 Weeks	1	2

The respondents were then asked to recommend the number of weeks a pre-vocational class should be scheduled (Table 5). Again 56 percent said the ideal weekly offering should be a 9 week period block of time. However, 31 percent would prefer the class to be offered on a 6 week basis.

Table 5. Recommended Number of Weeks that Pre-Vocational Agriculture should be Offered.

Number of Weeks Being Taught	Actual Number of Sample	% of Total Sample
2-3 Weeks	1	2
5 Weeks	1	2
6 Weeks	17	31
7 Weeks	2	4
8 Weeks	2	4
9 Weeks	31	56
18 Weeks	1	2

In comparing Table 4 and 5 the researcher finds several similarities. 56 percent of the sample prefers a 9 week class

and 56 percent also offers pre-vocational agriculture in a 9 week period block. A significant minority of 11 percent of the sample currently offers a 6 week pre- vocational class, however 31 percent favors a 6 week time period.

Each of the respondents were asked what grade level is the current pre-vocational agriculture class being offered (Table 6). A large number of classes are being offered at the eighth grade level. Seventy-eight percent of the pre-vocational programs offer the class on an eighth grade level, only 18 percent offer the class to seventh grade students.

Table 6. Grade Level Currently offered a Pre-Vocational Agriculture Class

Grade Level	Actual Number of Sample	% of Total Sample
6th Grade	2	4
7th Grade	10	18
8th Grade	43	78

The survey then asked what grade would be ideal to offer the pre-vocational agriculture class (Table 7). Ninety-five percent of the respondents would prefer the pre-vocational agriculture class to be in the eighth grade. Only another 5 percent prefers the seventh grade for the class.

Table 7. Ideal Grade to Offer Pre-Vocational Agriculture as Perceived by the Sample of Iowa Agriculture Instructors

Grade Level	Actual Number of Sample	% of Total Sample
7th Grade	3	5
8th Grade	52	95

In looking at Table 6 and 7, it is apparent that the eighth grade is currently being used for the pre-vocational classes. It is also apparent that the sample perceives the eighth grade as being the best place to introduce students to agriculture. The researcher can conclude from this data that the eighth grade should be set aside for exploratory type classes.

The survey inquired what days of the week the pre-vocational class is offered (Table 8). Most pre-vocational programs have been staying with a Monday through Friday class offering. Twenty-two percent of the sample offer the class with another day requirement. A Monday through Friday schedule would make the class more consistent from day to day. 78 percent of the respondents have the Monday-Friday schedule.

Table 8. Days of the Week Pre-Vocational Agriculture is Offered.

Days of the Week Class is Offered	Actual Number of Sample	% of Total Sample
Monday/Wednesday/Friday	7	13
Monday - Friday	43	78
Tuesday/Friday	4	7
Tuesday/Thursday/Friday	1	2

Data were also collected on the other classes offered in the pre-vocational sequence or exploratory type courses. Home Economics, Industrial Arts, and Art are the most prevalent courses selected for the sequence of classes offered on a pre-vocational or exploratory basis. It should be noted that most classes that are being taught are not vocational. Among those are: foreign language, computer, guidance, and art, to name a few. There seemed to be varying mixtures of classes taught at the exploratory level at each school.

In referring to Table 9, one can see that of the 55 sampled, 47 respondents offer Home Economics, 38 offer Industrial Arts, 32 offer Art, 14 offer Computer, and 10 offer Typing.

Table 9. Other Classes Offered in the Pre-Vocational Sequence of Exploratory Courses.

Class	Actual Number of Sample
Home Economics	47
Industrial Arts	38
Art	32
Computer	14
Typing	10
Spanish	7
Guidance/Peer Helping	6
German	5
Keyboarding	5
Music	5
Health	4
Study Skills	3
Drama	2
Business	2
Library	1
Mythology	1
Project Discovery	1
Home Mechanics	1
Communication Skills	1
Reading	1

The question was asked to the respondents to list the topics of instruction they would like to teach in a pre-vocational agriculture class. The teachers themselves came up with the topics listed in Table 10. In studying this table an agriculture instructor could get an idea of what topics to teach in a pre-vocational class. The researcher notes that only 11 percent of the sample felt Supervised Agricultural Experience Programs (SAEP) were important to teach at the pre-vocational level, however, SAEP makes up one-third of the agricultural science, technology, and marketing program (vocational agriculture), with one-third classroom and laboratory and the remaining one-third being FFA activities. The researcher can conclude from this data that Supervised Agricultural Experience Programs are being introduced at the high school level instead of at the pre-vocational level. One reason for this might be the depth that has to be covered over record keeping systems and how to select an SAEP with the facilities and resources the student has at home.

Table 10. Subject Matter Content that should be included in the Agriculture Pre-vocational Class.

Subject Matter	Actual Number of Sample	% of Total Sample
Horticulture	31	56
Animal Science	30	55
FFA activities	28	51
Agri-business	25	45
Careers	25	45
Agronomy	24	43
Computers	22	40
Agriculture Mechanics	21	38
Agriculture Awareness	21	38
Construction	20	36
Farm Management	14	25
Meat Science	7	13
SAEP	6	11
Welding	5	9
Parliamentary Procedure	5	9
Leadership	5	9
Conservation	4	7
Work and Work Ethic	2	4
Pet Care	1	2
Electricity	1	2
Check Writing	1	2

Agriculture instructors seem to have somewhat varying opinions of what to teach in a pre-vocational agriculture class. They also have differing opinions on how many class periods to spend on each topic. There is a shortage of material written on exploratory type programs. One problem with the existing materials is that it is written for lower elementary students. In considering all of these factors, the researcher asked the respondent to respond to a list of prepared topics of instruction. Table 11 shows several topics of instruction that the agriculture instructors rated on a scale of 1-5; 1-strongly agree; 2-agree; 3-undecided;4-disagree; and 5-strongly disagree.

Table 11. Subject Material to Teach at the Exploratory Level

Subject Material	**SA	A	UA	D	SD	
	1	2	3	4	5	Mean
Ag. Careers	39	11	5			1.38
Parliamentary Procedure	14	15	5	7	14	2.85
FFA activities	36	13	3	3		1.50
SAEP	20	18	11	2	4	2.13
Crops	10	20	15	10		2.45
Soils	8	19	10	12	6	2.80
Landscaping	5	18	25	5	2	2.65
Terrariums	7	20	18	8	2	2.60
Care of Livestock	12	19	12	9	3	2.49
Selection of Livestock	7	15	21	10	2	2.44
Breeds of Livestock	12	21	10	10	2	2.73
Meat Cuts	15	18	10	9	3	2.40
Concrete	1	9	10	21	14	3.69
Painting	7	9	11	17	11	3.29
Telephone Use	9	20	10	9	5	2.73
Check Writing	9	20	9	12	5	2.71
Computers	22	25	5	2	1	1.82
Conservation	17	18	12	6	2	2.24
Riding Horse	4	10	9	14	18	3.58
Gardening	5	24	22	3	1	2.47
Small Animals	10	28	14	1	2	2.22

**SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, SD-Strongly Disagree

Table 11. Continued:

Subject Material	**SA	A	UA	D	SD	
	1	2	3	4	5	Mean
Tractor Safety	17	18	14	2	4	2.24
Ruminant vs. Non-Ruminant	9	11	12	9	14	3.15
Agriculture in Iowa	31	18	4	1	1	1.60
Floriculture	6	20	20	7	2	2.62
Wildlife	14	23	12	5	1	2.20
Agriculture Science, Technology & Marketing	29	16	6	2	2	1.76
Metals	11	12	11	11	10	2.95
Woods	14	17	9	8	7	2.58

Other Topics Suggested to teach:

Farm Terms	1
Things that come from Agriculture	1
Survey and Measuring	2
Small Maintenance	2
Sales Order	1
Mechanical Nomenclature	1
Job Interview	1
Horticulture	1
FFA Activities	1

**SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, SD-Strongly Disagree

The results of Table 11 show the following ten topics of instruction that should be taught in an exploratory type program: Agricultural Careers (1.38), FFA activities (1.50), SAEP (2.13), Meat Cuts (2.40), Computers (1.82), Conservation (2.24), Tractor Safety (2.24), Agriculture in Iowa (1.60), Wildlife (2.20), and Agricultural Science, Technology, and Marketing (1.76). On Table 10 the most common topics of instruction are: Horticulture,

Animal Science, FFA activities, Agribusiness, Careers, Agronomy, Computers, Agricultural Mechanics, Agricultural Awareness, and Construction. From the two lists one can see some similarities and differences. These instructional areas could be taught in any order with a varying number of day requirements. The day requirements can be adjusted to fit his/her own agriculture program according to the needs of the community.

The agriculture instructor needs to have an idea of how many days to spend on each topic area. The researcher asked the respondents to give the number of day requirements per each individual topic. In Table 12 one can see the estimated number of days to be spent on each subject area. The researcher can see that each subject area should take approximately one to five days of instruction per topic area, however, a few of the subject areas may take from six to eleven days. It is assumed that the varying number of days per topic area is accredited to the fact that each agriculture program is designed to his/her own community needs.

Table 12. Number of Days Suggested for each Subject Area.

Subject Area	Day Requirements/Area											
	.5	1	2	3	4	5	6	7	8	9	10	11 Mean
Ag. Careers		9	7	19	11	8			1			3.13
Parliamentary Procedure		12	15	15	5	7		1				2.70
FFA activities		20	12	13	5	5						2.33
SAEP		26	12	7	5	5						2.02
Crops		22	15	10		5	3					2.27
Soils		20	15	10	5	3	1	1				2.33
Landscaping		20	15	15	2	3						2.15
Terrariums		16	16	10	3	10						2.55
Care of Livestock		15	10	12	10	1		1			4	2.96
Selection of Livestock		23	8	13	9	2						2.25
Breeds of Livestock		17	17	9	6	5					1	2.49
Meat Cuts		17	16	9	7	6						2.44
Concrete		42	7	2	2	2						1.45
Painting		43	8	3		1						1.33
Telephone Use		1	31	15	8							1.55
Check Writing		18	20	7	7	3						2.22
Computers in Agriculture		17	18	8	4	2			2		4	2.89
Conservation		17	20	10	6	2						2.05
Riding Horses		49	4	1		1						1.18
Gardening		25	23	15		2						2.11
Small Animal		36	11	5	1	2						1.58
Tractor Safety		19	20	5	4	2						1.82
Ruminant vs. Non-ruminant		23	16	9	4	3						2.05
Agriculture in Iowa		25	23	4		2	1					1.80
Floriculture		22	18	10	4	1						1.98
Wildlife		19	17	9	5	4	1					2.18
Agricultural Science, Technology and Marketing		25	17	8	3	4						2.05
Metals		17	12	12	9	5						2.51
Woods		11	12	13	7	6			1		3	2 3.49

One can see from Table 13 the average number of days to spend on each of these most prevalent topics range from 1.18 days of riding horses to 3.49 days in a woods unit. As stated earlier, the day requirements depend a lot upon the community needs and facilities of the agriculture classroom and laboratory. The research notes that an instructor would add or subtract from this list to get a total instructional unit for his/her pre-vocational agriculture curriculum.

Table 13. List of the Most Prevalent Topics to Teach in the Pre-Vocational Agriculture Class and the Day Requirements of Each.

Subject Material	Mean Day Requirements/ Area
Agricultural Careers	3.13
Parliamentary Procedure	2.70
FFA activities	2.33
SAEP	2.02
Meat Cuts	2.44
Computers	2.89
Conservation	2.05
Tractor Safety	1.82
Agriculture in Iowa	1.80
Wildlife	2.18
Agricultural Science, Technology, and Marketing	2.05
Woods	3.49
Care of Livestock	2.96
Breeds of Livestock	2.73
Crops	2.27
Small Animals	1.82
Metals	2.51

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The research determined what should be taught in a pre-vocational agriculture class according to instructors who have on-going programs.

The goal was to develop usable curriculum subjects to expand for the pre-vocational classes. The instructor could then pick and choose from the list to fit his/her own needs of the community and classroom.

The limitations that exist are as follows:

1. The researcher drew the sample from Iowa agriculture instructors that already have some type of pre-vocational program.
2. The number of programs drawn from in the state of Iowa.

Conclusions

There were several conclusions which could be derived from the findings of this study. When data from the pre-vocational agriculture instructors and their respective schools were compared to the state average data of grades 9-12 agriculture course offerings, they were very similar. The schools offering a pre-vocational agriculture class do not stand out in any of the areas sampled on. (Table 2) Some researchers believe that by offering a pre-vocational class the instructor could increase his/her enrollment. The data found in this study does not

support this assumption. There did not seem to be a difference between the enrollments of the programs surveyed as compared to the average enrollment in high school agriculture programs in Iowa. In surveying, one of the most common responses to why the instructors have a pre-vocational class offered, was to increase enrollment, however, the research compares enrollment of schools with pre-vocational and with only high school agriculture and the numbers only differ by 3.47 students. Total average enrollment in high school agriculture for 1987 was 39 and the sample showed an average of 42.47 students in the high schools offering pre-vocational agriculture.

Approximately 65 percent of the agriculture programs surveyed remain with the traditional type of agriculture program (year-long Vocational Agriculture I, II, III, and IV), with only 24 percent having a modified-traditional program (a mixture between semester and year-long courses). It would seem that there is no advantage of one type of program over the other in regard to offering a pre-vocational program. Each should fit the style of a pre-vocational class. (Table 3)

When comparing the number of weeks an agriculture pre-vocational class is taught and the number of weeks the instructors felt was ideal, the researcher found that 9 week blocks are the most popular on both accounts. A significant minority believe that 6 week classes would be another viable alternative for the class offering. (Tables 4 and 5) The data also indicated that a Monday through Friday schedule of classes

was preferred. This would be more consistent and should help the instructor to organize the pre-vocational class.

One can also conclude that the best grade to introduce pre-vocational or exploratory type programs was in the eighth grade. Approximately 95 percent of the sample felt that eighth grade was the best level to offer pre-vocational agriculture classes. (Table 6 and 7)

The researcher can conclude from the subject material to be taught in the pre-vocational class, that there are several areas to be covered in too short of time. One can see by the varying number of averages of agreement and disagreement that the instructors all have differing opinions of what to teach and how long it should be. There was also a concern that instructors could not cover a topic well in 2-5 days, therefore, the entire exploratory/pre-vocational class should include one unit on world food production, or international agriculture and possibly where agriculture is going in the future with advanced technology.

In comparing the 1973 Agribusiness and Natural Resource Curriculum Guide to the sample, one can see some similarities between the two. Agriculture instructors still believe that careers, facts about agriculture, and conservation should be taught at a pre-vocational level. The other topics listed on the curriculum guide also scored very high on the sample. It seems that farm and home beautification has been given another name or not taught at all in the pre-vocational class. As the sample curriculum went from a 9 week course to an 18 week course, it is

evident that other topics listed also rated very high on the scale from the sample.

Recommendations

If an agriculture instructor would like to start a pre-vocaitonal class, it is recommended that he/she utilize the findings of this study as well as other studies. Based on the data collected in this study, the following recommendations could be given to an agriculture instructor who plans to offer a pre-vocational agriculture class. The topics were chosen from Table 11 according to the largest means. Any topic rated 1.38 - 2.24 was considered for recommendation.

1. The pre-vocational class should be 9 weeks long, if there is not time for a 9 week program, it is advised to incorporate a 6 week class.
2. The pre-vocational class should be taught in the eighth grade.
3. Recommendations of topics for a 9 week course:

    a. Computers in Agriculture
    b. Agricultural Careers
    c. FFA activities
    d. Agriculture in Iowa
    e. Agricultural Science, Technology and Marketing
    f. Supervised Agricultural Experience Program (SAEP)
    g. Wildlife
    h. Small Animals
    i. Tractor Safety
    j. Conservation

4. Recommendations of Topics for a 6 week course:

    a. Computers in Agriculture
    b. Agricultural Careers
    c. FFA activities
    d. Agriculture in Iowa
    e. Agricultural Science, Technology and Marketing
    f. Supervised Agricultural Experience Program (SAEP)

g. Wildlife

5. A recommendation shall be made to give this information to a select committee to organize and develop the topics listed.

6. It is recommended that a copy of this study be placed in the Iowa Department of Education Office and Department of Agricultural Education at Iowa State University for work with pre-service and inservice for agriculture instructors.

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APPENDICIES

March 7, 1988
1104 Grant St.
Dexfield Community School
Redfield, Iowa 50233

^<NAME>
^<SCHOOL>
^<CITY> ^<STATE> ^<ZIP>

Dear Agriscience Instructor,

Please find enclosed a short survey I'd like you to complete concerning pre-vocational agriculture exploratory programs. Please complete and return the survey by April 5, 1988.

There are about 60 exploratory programs in the state of Iowa. I need information from all of you who have these programs for my creative component work. I am compiling data on pre-vocational curriculum and will have suggested curriculum topics to teach and time allocations for exploratory type classes. Each respondent will receive a copy of the findings.

I feel pre-vocational exploratory programs are the key to keeping our enrollments up and are also needed to educate all students on the basics of agriculture, whether or not they pursue an agriculture career. I found it difficult when I had to teach exploratory. I didn't know what to teach and to what extent I should cover those areas. In Iowa there are not a lot of sources to draw from. Therefore, this is the reason I'm basing my topic for my Master's degree on pre-vocational classes.

Please follow the instructions on the survey and complete it and return to: Barb Hansen, Agriscience Instructor, 1104 Grant Street, Dexfield Community School, Redfield, Iowa 50233. Also don't forget to enclose a course outline or a pencil copy of your exploratory class outline.

Thank you for your time! The information given to me on the survey will be kept in the strictest confidence.

Sincerely,

Barb Hansen

Pre-Vocational Program Survey
Name - _____

School - _____

Please answer the following questions.

Years of teaching experience (including 1987-88) _____

Years of teaching a pre-vocational class _____

How many are enrolled in your pre-vocational class?_____

Total agriculture enrollment _____

Total high school enrollment _____
Give a brief description of your present ag program. _____

_____

_____

_____
How long is the pre-vocational class? (Mark one)
4 weeks ___, 6 weeks ____, 9 weeks ____, other____
(Specify) _____

What grade levels are included in the pre-vocational program? (Mark one of the following)
sixth ___, seventh ____, eighth _____, ninth _____
Other _____ (Specify)_____
How is the class offered? (Mark one)

M - W - F ____, M - F ____, T - Th _____

Other ____ (Specify) _____
What other courses, other than agriculture are offered to the students as a pre-vocational class? (Please list)

_____

_____
What is best grade to have a pre-vocational exploratory class?_____

_____

How long should it be?(in weeks)_____
Describe the contents of the pre-vocational program you would like to have.

_____

_____

_____

Rate the following topics according to importance in the teaching curriculum in a pre-vocational class and give the optimum day requirements for each. Use the following scale.

strongly agree	agree	undecided	disagree	strongly disagree
1	2	3	4	5

Day Requirements

___Agricultural careers-local, county, state, national and international. _____

___Parliamentary Procedure-taps of gavel, how to be a good chairperson, main motion, refer to a committee, etc. _____

___Future Farmers of America-have FFA officers speak to students, show slides or video of FFA activities. _____

___Supervised Agricultural Experience Programs-show slides of SAE and have officers talk about program. _____

___Crops-corn and soybean germination comparisons, alternative crops in Iowa, use greenhouse facility. _____

___Soils-formation, texture, color, proper soil sampling, test for nutrients and field trip to take a sample. _____

___Landscaping-general principles, ID common trees and shurbs, selection of trees and shrubs. _____

___Terrariums-Discuss how a terrarium relates to plant science, have students make a terrarium to take home. _____

___Care of livestock-pigs, lambs, or calves, show how to perform skills. _____

___Selection of Livestock-show slides of animals in class. _____

___Breeds of Livestock-swine, dairy, or horses because there aren't so many different breeds, slides. _____

___Meat Cuts-pork, beef, and/or lamb; ID, grade, taste use color slides or pictures, field trip to local meat market. _____

___Concrete-concrete vs. cement terminology; standard procedures, make a hog trough or splashboard. _____

___Painting-how to properly apply paint with a brush or a spray gun, clean paint brushes and other equip. _____

___Telephone Use-apply to agribusiness occupations, on proper use of the phone, what to repeat, etc. _____

___Check Writing-how to write checks properly, field trip to the bank. _____

___Computers in Agriculture-get several programs to let the students explore. _____

___Conservation of Soil and Water-read several articles in books and magazines and give oral and written reports. _____

___Proper Riding of Horses _____

___Gardening _____

___Small Animals-list what small animals are being used on the farm. _____

___Tractor Safety and/or Home Safety _____

___Ruminant vs. Non-Ruminant Digestive System _____

___Importance of Agriculture to Iowa's Economy _____

___Floriculture-the study of floral principles and design. _____

___Wildlife management-this might include gun safety, etc. _____

___Ag Science and Technology _____

___ Metals and welding _____

___ Woods and construction _____

Other (please specify)

___ _____ _____

___ _____ _____

___ _____ _____

___ _____ _____

___ _____ _____

***Please enclose an outline of your exploratory Course. Thank You!

IOWA PRE-VOCATIONAL AGRICULTURE PROGRAMS COMPILED FEBRUARY 18, 1988 (CE 5 - 1st Semester)
By Barb Hansen

GRADE	SCHOOL	P.O.	INSTRUCTOR
NORTH EAST DISTRICT -13			
8	Alburnett	Alburnett	Eugene Mohling
8	North Winneshiek	RR3 Decorah	Clayton Wangsness
	Edgewood-Colesburg	Edgewood	Jim Russ
	Valley of Elgin	Elgin	John Molumby
	Fredericksburg	Fredericksburg	Dennis Steele
	Guttenberg	Guttenberg	Steve Zaruba
	Jesup	Jesup	Allan Nelson
8	Linn-Mar	Marion	Dennis Selness
7	Olin Consolidated	Olin	Lonnie Flack
	Shellsburg	Shellsburg	Duane Van Winkle
7	Sumner	Sumner	John Scott
7	North Fayette	West Union	Brian Harper
	Midland Community	Wyoming	Lonnie Flack
SOUTH WEST DISTRICT - 6			
	Adair-Casey	Adair	Terry Boeck
	Charter Oak-Ute	Charter Oak	Tim Baughman
	Griswold	Griswold	Tony Hunolt
	Orient-Macksburg	Orient	Ed Hansen
	Fremont-Mills	Tabor	Douglas Jamison
	Underwood	Underwood	Joseph Pickard
SOUTH EAST DISTRICT - 14			
	Belle Plaine	Belle Plaine	Scott Frank
8	Brooklyn	Brooklyn	Wayde Willand
	Columbus Community	Columbus Junction	Robert Barnes
8	Northeast Community	Gooselake	Kevin Cooper
7	Lone Tree	Lone Tree	Dean Rodgers
	Lost Nation	Lost Nation	David Bowman
	Iowa Valley	Marengo	Andrew Rowe
8	North Mahaska	New Sharon	Ronald Bever
	English Valleys	North English	Ann Brau
8	Preston	Preston	Bruce Bearinger
8	Solon	Solon	Steve Wieneke
8	Mid-Prairie	Wellman	Paul Swank
8	West Liberty	West Liberty	Richard Brand
	Andrew	Andrew	Todd Knobloch
NORTH CENTRAL DISTRICT - 6			
8	Algona	Algona	Brad Greiman
7	Aplington	Aplington	Clyde Johnson
	Charles City	Charles City	Jim Lundberg
	Clarion	Clarion	Mike Richards
	Parkersburg	Parkersburg	Milt Luckstead
8	Union-Whitten	Union	Linda Haywood
NORTH WEST DISTRICT - 8			
	Everly	Everly	Clay Drenth
8	Harris-Lake Park	Lake Park	Stan Anderson
8	Laurens-Marathon	Marathon	Joseph Pedersen
	Manson	Manson	Rodney Olson
	Newell-Providence	Newell	Marlyn Hogrefe
8	Central Lyon	Rock Rapids	Dwayne Postma
6-8	Rolfe	Rolfe	Gary Vrba
	Sioux Center	Sioux Center	David Krahling

PRE-VOCATIONAL AGRICULTURE PROGRAMS (CONT.)

SOUTH CENTRAL DISTRICT - 14

8	East Union	Afton	Randy Pettit
8	Albia	Albia	G. Edwin Hall
8	North Polk	Alleman	Thomas Cory
7	Twin Cedars	Bussey	Patrick Powers
8	Chariton	Chariton	Susan Flanigan
8	Colfax-Mingo	Colfax	Bob Leonard
8	Wayne Community	Corydon	Loris Lash
	Lamoni	Lamoni	Jeff Weydert
8	LDF Community	LeGrand	Charles Pilling
8	Moulton-Udell	Moulton	John Tippett
8	Murray	Murray	Bill Coleman
8	Clark Community	Oscelola	Leland Dolecheck
8	Dexfield	Redfield	Barb Hansen
	Lynville-Sully	Sully	Tom Paulsen